

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. – 30. (cancelled)

31. (previously presented) A method to assess the inhibitory activity of a test substance on a polypeptide that comprises SEQ ID NO:2, the method comprising:

contacting the polypeptide with the test substance; and

detecting the amount of carboxylate transported by the polypeptide in the presence and absence of the test substance, wherein inhibition of transport in the presence as compared to the absence of the test substance indicates that the test substance is a cellular transporter inhibitor.

32. (previously presented) The method of claim 31 wherein the polypeptide is expressed in a *Xenopus* oocyte comprising an Indy mRNA.

33.-52. (cancelled)

53. (currently amended) A method ~~for evaluating~~ to assess interaction of a test molecule with a transporter polypeptide, the method comprising:

providing a transporter polypeptide that comprises SEQ ID NO:2,

contacting the transporter polypeptide with a test molecule; and

~~evaluating~~ detecting interaction of the test molecule with the transporter polypeptide, wherein the interaction is a binding interaction or an activity-modulating interaction.

54. (currently amended) The method of claim 53, wherein ~~evaluating~~ detecting an interaction of the test molecule comprises ~~evaluating~~ detecting transport activity of the transporter polypeptide.

55. (cancelled)

56. (currently amended) The method of claim 53, wherein ~~evaluating~~ detecting an interaction of the test molecule comprises ~~evaluating~~ detecting binding to the transporter polypeptide.

57. (cancelled)

58. (currently amended) The method of claim 54, wherein ~~evaluating~~ detecting an interaction of the test molecule comprises ~~evaluating~~ detecting the transport activity in the presence and absence of the test molecule, and an alteration in the transport activity in the presence as compared to the absence of the test substance indicates that the test substance is a modulator of the transporter polypeptide.

59. (previously presented) The method of claim 53, wherein providing the transporter polypeptide comprises expressing the transporter polypeptide in a host cell such that the transporter polypeptide is present at the cell surface.

60. (cancelled)

61. (currently amended) The method of claim 53, wherein the step of ~~evaluating~~ detecting comprises assaying transport of a carboxylate.

62. (previously presented) The method of claim 61, wherein the carboxylate is selected from the group consisting of succinate, alpha-ketoglutarate, fumarate, and citrate.

63. (previously presented) The method of claim 62, wherein the carboxylate is succinate.

64. (previously entered) The method of claim 59, wherein the host cell is a *Xenopus* oocyte.

65. (previously entered) The method of claim 59, wherein the host cell is a mammalian cell.

66. (previously presented) The method of claim 53, wherein the test molecule is selected from the group consisting of antibodies, peptides, nucleic acid molecules, and small organic molecules.

67. (currently amended) The method of claim 53, further comprising contacting the test molecule to a cell and ~~evaluating~~ detecting an aging symptom rate of aging of the cell.

68. (currently amended) A method ~~of evaluating~~ to assess a library of compounds, the method comprising:

providing a transporter polypeptide that comprises SEQ ID NO:2;

providing a library of chemical compounds; and

for each ~~member of~~ chemical compound of a plurality of chemical compounds from the library,

contacting the transporter polypeptide with the chemical compound ~~a test molecule~~, and

~~evaluating~~ detecting interaction of the chemical compound ~~test molecule~~ with the transporter polypeptide.

69. (currently amended) The method of claim 68 further comprising, after the detecting, selecting one or more members that stimulate the transporter polypeptide.

70. (currently amended) The method of claim 68 further comprising, after the detecting, selecting one or more members that inhibit the transporter polypeptide.

71. (currently amended) The method of claim 68 further comprising, after the detecting, contacting one or more members of the library to a cell, and ~~evaluating an aging symptom~~ detecting rate of aging of the cell.

72. (cancelled)

73. (currently amended) A method ~~for evaluating~~ to assess a cell, the method comprising:

providing a cell that ~~can express~~ contains a nucleic acid encoding a transporter polypeptide that comprises SEQ ID NO:2;
contacting a test molecule to the cell; and
~~evaluating~~ detecting expression of an mRNA that encodes the transporter polypeptide.

74. (cancelled) The method of claim 75 wherein the transporter-related parameter of the cell is transporter activity.

75. (currently amended) A method ~~for evaluating~~ to assess a cell, the method comprising:

providing a cell that ~~can express~~ contains a nucleic acid encoding a transporter polypeptide that comprises SEQ ID NO:2
contacting a substrate of the transporter polypeptide to the cell; and
~~evaluating~~ detecting a transporter-activity of the cell.

76. (previously presented) The method of claim 75 wherein the contacting is in the presence of a test molecule.

77. (previously entered) The method of claim 75 wherein the substrate is a carboxylate.

78. (previously entered) The method of claim 77 wherein the substrate is succinate

79. (previously entered) The method of claim 75 wherein the substrate is labeled.

80. (previously presented) The method of claim 75 wherein the transporter polypeptide is produced from a heterologous nucleic acid in the cell.

81. (cancelled)

82. (previously presented) A method to assess the inhibitory activity of a test substance on a polypeptide that comprises SEQ ID NO:3, the method comprising:

contacting the polypeptide with the test substance; and

detecting the amount of carboxylate transported by the polypeptide in the presence and absence of the test substance, wherein inhibition of transport in the presence as compared to the absence of the test substance indicates that the test substance is a cellular transporter inhibitor.

83. (currently amended) A method ~~for evaluating~~ to assess interaction of a test molecule with a transporter polypeptide, the method comprising:

providing a transporter polypeptide that comprises SEQ ID NO:2,

contacting the transporter polypeptide with a test molecule;

~~evaluating~~ detecting interaction of the test molecule with the transporter polypeptide;

contacting the test molecule to a cell; and

~~evaluating~~ detecting an aging symptom rate of aging of the cell.

84. (currently amended) A method ~~for evaluating~~ to assess interaction of a test molecule with a transporter polypeptide, the method comprising:

providing a transporter polypeptide that comprises a sequence that is selected from the group consisting of SEQ ID NO:3, 4, 5, and 6

contacting the transporter polypeptide with a test molecule;

~~evaluating~~ detecting interaction of the test molecule with the transporter polypeptide;

contacting the test molecule to a cell; and

~~evaluating~~ detecting an aging symptom rate of aging of the cell.

85. (currently amended) The method of claim 84, wherein ~~evaluating~~ detecting an interaction of the test molecule with the transporter polypeptide comprises ~~evaluating~~ detecting transport activity of the transporter polypeptide.

86. (currently amended) The method of claim 85 wherein ~~evaluating~~ detecting an interaction of the test molecule with the transporter polypeptide comprises ~~evaluating~~ detecting transport activity in the presence and absence of the test molecule, and an alteration in the transport activity in the presence as compared to the absence of the test substance indicates that the test substance is a modulator of the transporter polypeptide.

87. (previously presented) The method of claim 85 wherein the transporter polypeptide comprises SEQ ID NO:4.

88. (previously presented) The method of claim 85 wherein the transporter polypeptide comprises SEQ ID NO:5.

89. (previously presented) The method of claim 85 wherein the transporter polypeptide comprises SEQ ID NO:6.

90. (previously presented) The method of claim 85 wherein the method is used to screen a library of chemical compounds.

91. (previously presented) The method of claim 85 wherein the test molecule is an antibody.

92. (previously presented) The method of claim 85 wherein the test molecule is a peptide.

93. (previously presented) The method of claim 85 wherein the test molecule is a small organic molecule having a molecular weight between 50 to 2,500 Daltons.

94. (previously presented) The method of claim 85 wherein the test molecule is a nucleic acid molecule selected from the group consisting of: antisense molecules, ribozyme molecules, double-stranded interfering RNAs, and triple helix molecules.

95. (previously presented) The method of claim 84 wherein ~~evaluating~~ an interaction of the test molecule with the transporter polypeptide comprises ~~evaluating~~ detecting binding to the transporter polypeptide.

96. (previously presented) The method of claim 95 wherein the transporter polypeptide comprises SEQ ID NO:4.

97. (previously presented) The method of claim 95 wherein the transporter polypeptide comprises SEQ ID NO:5.

98. (previously presented) The method of claim 95 wherein the transporter polypeptide comprises SEQ ID NO:6.

99. (previously presented) The method of claim 95 wherein the method is used to screen a library of chemical compounds.

100. (previously presented) The method of claim 95 wherein the test molecule is an antibody.

101. (previously presented) The method of claim 95 wherein the test molecule is a peptide.

102. (previously presented) The method of claim 95 wherein the test molecule is a small organic molecule having a molecular weight between 50 to 2,500 Daltons.

103. (previously presented) The method of claim 84 wherein the transporter polypeptide comprises SEQ ID NO:3.